Geologic Map of the Hokusai Quadrangle (H05) of Mercury

Conference or Workshop Item

GEOLOGIC MAP OF THE HOKUSAI QUADRANGLE (H05) OF MERCURY.

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ABSTRACT

Introduction: MESSENGER data are being used to create quadrangle geologic maps of Mercury [1] in preparation for BepiColombo [2,3]. We present our recently published geologic map of the Hokusai quadrangle (H05; 0–90°E, 22.5–65°N) [4].

Data and methods:

Main basemap: H05's ~166 m/pixel v0 BDR tiles with moderate (~68°) solar incidence angles.

Auxiliary basemaps: low (<30°) and high (>72°) incidence angle basemaps; ~665 m/pixel enhanced color mosaic; MLA- and stereo-derived DEMs [5,6].

Map projection: Lambert Conformal Conic (c. meridian, 45°E; st. parallels, 30°N and 58°N; radius, 2,440 km).

Scale: Publication scale 1:3M to match other MESSENGER-era quadrangle maps [1]. Digitization scale ~1:400k.

Updates: Since publication, we have reconciled the H02–H05 boundary and added an indicative cross-section to the mapsheet. We plan to use "spatial adjustment" to make our shapefiles align with the final topographically controlled H05 basemap tiles.

References: [1] Galluzzi V. et al. (2019) *Geophys. Res. Abs., 21*, EGU2019-18802-1. [2] Benkhoff J. et al. (2010) *Planet. Space Sci., 58*, 2–20. [3] Rothery D. A. et al. (2020) *Space Sci. Rev., 216*, 66. [4] Wright J. et al. (2019) *J. Maps, 15*, 509–520. [5] Zuber M. T. et al. (2012) *Science, 336*, 217–220. [6] Stark A. et al. (2017) *48th LPSC*, Abstract #2287.

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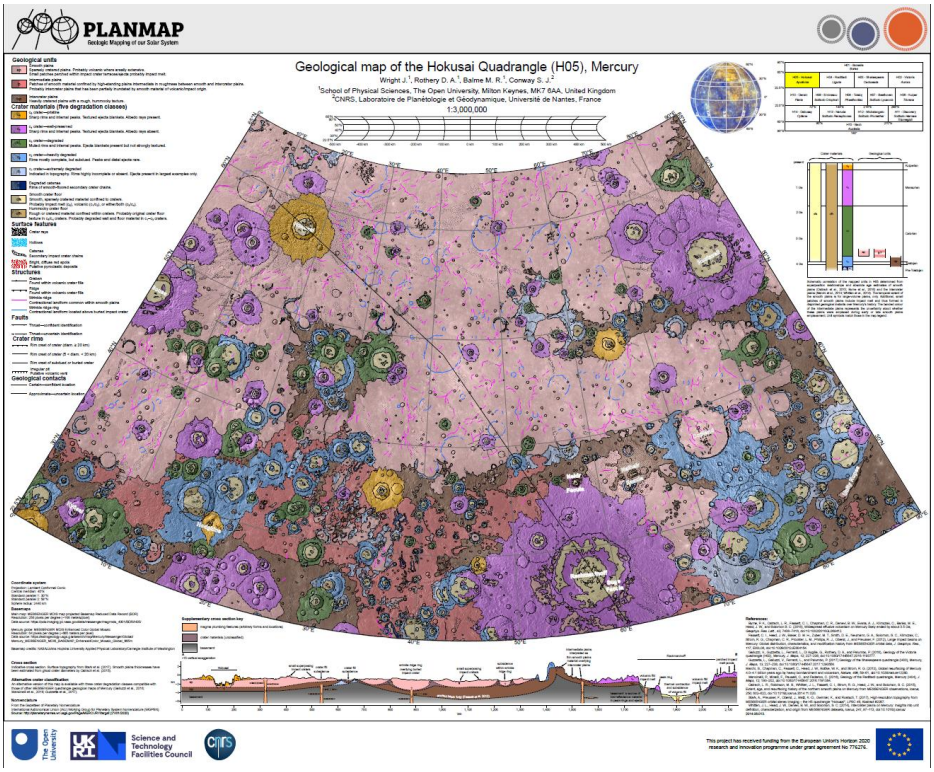

Figure Caption: Geologic map of H05.